

REMARKS

Present Status of the Application

The Office action objected the disclosure due to the informalities in specification.

The Office action rejected claims 1, 4, 7, 8, 11, 13, 14, 17 and 19 under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag (US 4534032; hereinafter “Hoag”).

The Office action rejected claims 2, 3, 9, 10 and 15~16 under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag and further in view of Wong (US 4646197; hereinafter “Wong”).

The Office action rejected claims 5, 6, 12 and 18 under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag and further in view of Mitsuhashi (US 6235371; hereinafter “Mitsuhashi”).

In response thereto, Applicants have amended the specification to overcome the objection and have amended claims 1, 8 and 14 to improve clarity. Applicants respectfully submit that all the pending claims are placed in proper condition for allowance, and reconsideration of all the pending claims is respectfully requested.

Response to objections

The Office action objected the disclosure due to the informalities in specification.

Applicant appreciates the correction suggestion provided by the Office Action and amends informalities in related paragraph [0007], [0008], [0009] and [0010].

Response to Claim Rejections under 35 U.S.C. 103(a)

The Office action rejected claims 1, 4, 7, 8, 11, 13, 14, 17 and 19 under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag (US 4534032; hereinafter “Hoag”).

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In response thereto, Applicants have amended claims 1, 8 and 14 ,and cancelled claims 5~6, 12 and 18 to more clearly define the claimed invention and respectfully traverse all said rejections on the grounds set forth in detail below.

(1) The features are recited in Independent claims 1, 8 and 14. With respect to independent claim 1 as an example, the recited the features are,

“1. A lighting device for a lamp device, comprising:
a circuit board; and

film capacitors, packaged on the circuit board by using leadless flow solders,

.....

wherein each film capacitor comprises polypropylene films and lead wires, and *a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper*, and terminals and internal materials of the film capacitors are leadless;

wherein the film capacitors are constructed by a combination of a polypropylene film and an aluminum foil, or an aluminum-deposited polypropylene film.

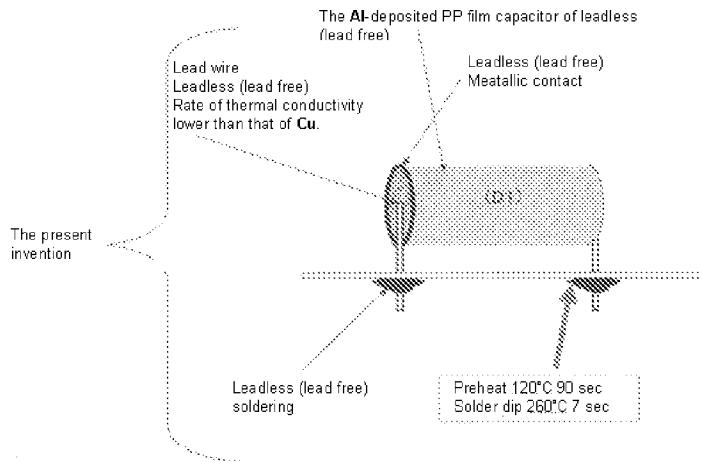
(Emphasis Added)

AAPA, Hoag, Wong and Mitsuhashi all fail to disclose/teach the combination of the above two technical features, i.e., “*a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper*” and “*the film capacitors are constructed by a combination of a polypropylene film and an aluminum foil, or an aluminum-deposited polypropylene film*”.

Hence, persons skilled at art can't obviously combine any teachings from AAPA, Hoag, Wong and Mitsuhashi, thereby Applicant respectfully assert that Independent claims 1, 8 and 14 are patentable over AAPA, Hoag, Wong and Mitsuhashi, taken alone or in combination.

(2) The selection of materials (combination of Al-deposited polypropylene film capacitor; and lead wire with lower thermal conductivity than Cu) has “*Critical meanings*”.

Please referring to the following Figure which shows the present application,



In detail, a defect often exists in the Al-deposited polypropylene film capacitor. When heat is transferred to the Al-deposited polypropylene film capacitor, a “self-healing mechanism” will be happened for evaporating aluminum around the defect and repairing the defect as a result.

However, if a lead wire with a thermal conductivity higher than (or equal to) a thermal conductivity of copper is utilized, ***too much heat*** (caused by leadless soldering) will be transferred to the Al-deposited polypropylene film capacitor first, and the Al-deposited polypropylene film capacitor will be severely damaged. At that time, even the “self-healing mechanism” will be happened, the Al-deposited polypropylene film capacitor still can’t be repaired.

Therefore, with combination of the above two technical features, ***appropriate heat*** will be transferred to the Al-deposited polypropylene film capacitor (Al-contained) through the lead wire (thermal conductivity lower than Cu), i.e, the above selection and combination has critical meanings. As a result, not only the Al-deposited polypropylene film capacitor will not be deteriorated severely, but also the “self-healing mechanism” can be implemented by the

appropriate heat.

To sum up, the selection of material of “polypropylene film capacitor” and “lead wire” has “Critical meanings” and has unobviousness. Persons skilled at art can’t obviously know the way of how to select and combine related material. In other word, the combination of an “Al-deposited polypropylene film capacitor” with “lead wire with thermal conductivity lower than copper” INDEED can prevent the film capacitor from being damaged and allow to provide precisely an amount of heat suitable to execute self-healing mechanism.

Applicants respectfully submit that the grounds on which the Office action rejected claims 1~19 under 35 U.S.C. 103(a) are no longer valid, and accordingly traverse the rejection of claims 1~19 under 35 U.S.C. 103(a).

Since independent claims 1, 8 and 14 are allowable, claims dependent thereon should also be allowed as a matter of law for they contain all of the limitations of their respective independent claim. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims 1~4, 7~11, 13~17 and 19 of the present application patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
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